

Amendments to the Specification:

Please replace the paragraph on page 15 beginning at line 12 and ending at line 24 with the following paragraph with edits noted therein (*namely, correctly referencing Figure 4*):

The purpose of the HMSF is to spectrally separate the colors of the fluorescent quantum dots before a detector. Because of the size constraints in the read-out head of a commercially available disk player and the large spectral range, conventional grating spectrometers do not fulfill the requirement. Even though conventional spectrometers use holographically fabricated surface relief gratings, the present invention uses a spectrometer based on multiplexed volume holographic gratings which satisfy uniquely the spectral range and size requirements for the current application. Figure 5 4 illustrates how the HMSF is used in the read-out system. In the figure, read-out head 500 is composed of a dichroic beam splitter 510 that spectrally isolates the illuminating wavelength at 405 nm from the longer fluorescence wavelengths. The focusing lens 520 also collimates the fluorescence emitted by the quantum dots. The spatial coherence is excellent since the light is emitted from a sub-micron spot resulting in a highly collimated beam after the same focusing lens.